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S7	38005	steganograph\$4 or ((digital\$4 or electronic) near4 watermark\$4) or ((data or information) near4 (hid\$4 or embed\$4))	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	OR	ON	2005/06/09 20:46
S8	14	(spot near (color or colour)) same (S7)	US-PGPUB; USPAT; EPO; DERWENT; IBM_TDB	OR	ON	2005/06/09 20:46
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Abstract**Proceedings of SPIE -- Volume 5020****Security and Watermarking of Multimedia Contents V, Edward J. Delp III, Ping W. Wong, Editors, June 2003, pp. 430-439**

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(Scitation login required).**Full Text:** [PDF (441 kB)]**Watermarking spot colors**

Osama M. Alattar and Alastair M. Reed
Digimarc Corp. (USA)

Watermarking of printed materials has usually focused on process inks of cyan, magenta, yellow and black (CMYK). In packaging, almost three out of four printed materials include spot colors. Spot colors are special premixed inks, which can be produced in a vibrant range of colors, often outside the CMYK color gamut. In embedding a watermark into printed material, a common approach is to modify the luminance value of each pixel in the image. In the case of process color work pieces, the luminance change can be scaled to the C, M, Y and K channels using a weighting function, to produce the desired change in luminance. In the case of spot color art designs, there is only one channel available and the luminance change is applied to this channel. In this paper we develop a weighting function to embed the watermark signal across the range of different spot colors. This weighting function normalizes visibility effect and signal robustness across a wide range of different spot colors. It normalizes the signal robustness level over the range of an individual spot color's intensity levels. Further, it takes into account the sensitivity of the capturing device to the different spot colors.

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